AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended) In system for maintaining a plurality of assemblies including a plurality of replaceable components, a method of determining time intervals at which unscheduled demand for the components is expected to occur, comprising:

establishing a set of statistical models for a probability of unscheduled component demand as a function of [[time]] at least one variable pertaining to component usage;

for each component, collecting historical unscheduled component demand data;

for each component, using the collected historical unscheduled component demand data to select among the plurality of models one model of the probability of unscheduled component demand as a function of time;

for each component, selecting ~~a desired serviceable component availability rate~~ an allowable probability of underestimating an average failure rate, α; and

using the selected model of the probability of unscheduled component demand as a function of [[time]] the at least one variable pertaining to component usage for each component to calculate the time intervals at which the unscheduled component demand is expected to occur.

2. (Currently amended) The method of claim 1, wherein using the selected model of the probability of unscheduled component demand as a function of [[time]] the at least one variable pertaining to component usage to calculate ~~a time period until~~ the time intervals at which the

unscheduled component demand is expected to occur comprises calculating a time ~~period~~ interval when the probability of a next unscheduled component demand event equals 1-α.

3. (Currently amended) The method of claim 1, wherein each statistical model comprises a Poisson distribution,

~~$P\{N(t) = f\} \cong e^{-\lambda} \frac{(\lambda * t)^f}{f!}$~~

$$P\{N(t) = f\} \cong e^{-\lambda \cdot t} \frac{(\lambda \cdot t)^f}{f!}.$$

4. (Original) The method of claim 3, wherein selecting the statistical models comprises selecting a set of equations for λ.

5. (Currently amended) The method of claim 1, further comprising eliminating, from within the at least one variable pertaining to component usage, insignificant variables and variables that cause multicollinearity from each of the established models.

6. (Currently amended) The method of claim 1, wherein each statistical model comprises a Poisson distribution,

$$P\{N(t)_{i,j,m} = f\}_k \cong e^{-\lambda_{i,j,k,m} * t} * \frac{(\lambda_{i,j,k,m} * t)^f}{f!}$$

7. (Currently amended) A method of forecasting unscheduled demand for a plurality of different components, comprising:

establishing a set of statistical models for modeling unscheduled demand for the components, wherein the statistical models are each a function of at least one variable pertaining to component usage;

for each component, selecting one of the statistical models for a probability of unscheduled component demand; and

for each component, determining a date at which a cumulative probability of unscheduled component demand reaches a predetermined threshold.

8. (Currently amended) The method of claim 7, wherein each statistical model comprises an N-erlang distribution,

$$P\{S_{n,i,j,m} \le t\}_k \cong \begin{cases} 1 - \sum_{r=0}^{n-1} e^{-\lambda_{i,j,k,m} * t} \frac{(\lambda_{i,j,k,m} * t)^r}{r!} & \text{if } t \ge 0 \\ 0 \quad \text{otherwise} \end{cases}$$

9. (Original) The method of claim 8, wherein selecting the statistical models comprises selecting a set of equations for λ.

10. (Currently amended) The method of claim 7, wherein each statistical model corresponds to a Poisson distribution,

~~$P\{N(t) = f\} \cong e^{-\lambda} \frac{(\lambda * t)^f}{f!}$~~

$$P\{N(t) = f\} \cong e^{-\lambda \cdot t} \frac{(\lambda \cdot t)^f}{f!}$$

Alt Contd

11. (Original) The method of claim 10, wherein selecting the statistical models comprises selecting a set of equations for λ.

12. (New) The method of claim 1, wherein the at least one variable pertaining to component usage includes temperature.

13. (New) The method of claim 1, wherein the at least one variable pertaining to component usage includes hours of operation.

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14. (New) The method of claim 1, wherein the at least one variable pertaining to component usage includes flight cycles.

15. (New) The method of claim 4, further comprising computing a confidence figure, wherein the confidence is a function of the statistical models used in the selection of λ.

16. (New) The method of claim 11, further comprising computing a confidence figure, wherein the confidence is a function of the statistical models used in the selection of λ.